

Impact of Shared Use Agreement Adoption on School District Expenditures in Los Angeles County

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Executive Summary

There is increasing interest in allowing community members access school facilities for physical activity outside regular school hours. These formal arrangements are commonly called shared-use agreements (SUAs). A potential barrier to wider SUA adoption is the uncertainty among school officials regarding the impact of SUA adoption on their costs, such as those from maintenance, security, or liability.

In this study, we attempt to estimate the impact of SUA adoption on school district expenditures. We compiled a dataset of annual expenditures and SUA adoptions for a sample of school districts in Los Angeles County (LAC) over the period 2005-2012. SUA adoption data was collected through an online survey of all LAC districts, which had a 56% response rate (45 districts out of 80 participated). The expenditure data came from financial reports submitted to the California Department of Education by all school districts in the state, using a standardized code structure.

Our statistical analysis takes advantage of the availability of data for all 45 districts over 8 years. Over the 2005-2012 period, some districts did not have any SUAs; others had SUAs throughout the entire period; and a third group experienced changes in the number of schools with SUAs. Having this data allows us to remove important potential sources of bias, such as those due to differences in expenditures between districts that adopt SUAs and those that never adopt them that are unrelated to the adoption of SUAs and those arising from expenditure trends over time. Moreover, because expenditure data is categorized by type of expenditure, we explored the possibility of having found spurious relationships by testing whether SUA adoption was associated to expenditures that should not be affected by them, such as instruction and pupil services.

After accounting for differences in district characteristics (number of students and demographic characteristics of students), time trends, and district-specific effects, we only found a significant association between the number of schools with SUAs in a district and district expenditures categorized as *community services*. We also found a borderline significant association for expenditures in the *enterprise services* category. According to CDE guidelines, community services captures the costs of activities concerned with providing services to community participants other than students, while enterprise services expenditures concern activities with costs financed or recovered primarily through user

charges. Both of these descriptions are consistent with activities that may arise from the adoption of a SUA.

Our findings indicate that each additional school with at least one SUA is associated with \$15,500 higher *community services* expenditures and, less conclusively, \$340,000 higher *enterprise services* expenditures (5% and 1% increases, respectively, for the average district).

Background

There is increasing interest in allowing community members access school facilities outside regular school hours to provide safe locations for physical activity [1]. Names commonly given to these agreements include civic center permits, space lease agreements, joint use agreements, shared-use agreements, facilities use agreements, or license agreements. Increased adoption of these formal arrangements—called shared-use agreements (SUAs) in this study—may lead to various benefits to communities but it may also generate additional financial burden on schools [2, 3].

Understanding how SUA adoptions affect school and school district costs is important because uncertainty regarding the financial impact of SUAs has been recognized as a potential barrier for schools to enter into these agreements. Research on this topic has been limited and findings have not been conclusive. For example, a report by the Center for Cities and Schools at the University of California Berkeley concluded that “school districts tend to highly subsidize the community use of schools”, [3]. Conversely, a recent study in a large school district in North Carolina found that, despite significant growth in after-school program participation over a 12-month period, there was no significant increase in operating expenses [2].

In the present study, we try to assess the impact of SUA adoptions on school district expenditures using SUA adoption and financial data for a sample of districts in Los Angeles County over the 2005-2012 school years. We focus on agreements that allowed access to facilities for physical activity, thus excluding those covering libraries, arts facilities, or public meetings.

Data

Joint Use Agreements

We developed an online survey to identify current and previous shared-use agreements in Los Angeles County. For each school district, we asked if the respondent was the person most likely to be aware of the existence of a SUA in their district. If so, we asked them to identify the schools in their district currently covered by a SUA, as well as those schools that had previously been covered by a SUA that was no longer in place. In our survey, and thus for the

purpose of this study, a SUA was defined as an agreement between schools/school districts and adult community members allowing the use of school facilities for physical activity outside of regular school hours.

A link to the survey was emailed to relevant district officials—which included directors of facilities, superintendents, and finance and business officers—in each of the 80 school districts in Los Angeles County. Officials who had not completed the survey were reminded through emails and phone calls 8 weeks after the initial request. Additional follow-up phone calls were made to some participants to clarify the information they had provided and to collect information regarding the start and end dates of their agreements.

School District Expenditures and Characteristics

California’s standardized account code structure (SACS) provides all California school districts with a uniform and comprehensive chart of accounts they must use to categorize their revenues and expenditures. The California Department of Education (CDE) first implemented this system in the early 1990s and required its universal adoption with the 2003-2004 school year. The adoption of SACS by all districts in the state provides a viable opportunity for policymakers, educators, and the public to understand how districts receive funding and how it is spent.

SACS categorizes revenue and expenditure transactions according to functions, funds, resources, goals, and objects. Functions identify the activity for which a service or material is acquired. The nine major function categories are listed in Table 1. Because the use of some lower-level codes is optional (e.g., entering function code 5400 for civic services instead of the broader code 5000 for community services), we aggregated all expenditures under each of the major function categories. In addition, for the cost analysis we grouped instruction and instruction-related services under a single expenditure category and we ignored the “other outgo” category.

Table 1. Main SACS Function Levels

Codes	Function
1000-1999	Instruction
2000-2999	Instruction-related services
3000-3999	Pupil services
4000-4999	Ancillary services
5000-5999	Community services
6000-6999	Enterprise
7000-7999	General administration
8000-8999	Plant services
9000-9999	Other outgo

Although we initially expected most SUA-related costs to be captured in the *plant services* function, a review of SACS guidelines made it clear that districts should code these costs under the *community services* function. More specifically, the accounting manual explains that this category refers to “Activities concerned with providing community services to community participants other than students. These include activities authorized by the Community Recreation Act [...] and by the Civic Center Act.” [4] [Examples of activities covered by these acts include operation of community swimming pool, use of school facilities such as basketball courts, organizing recreation programs at city parks or school playgrounds. In addition, SUA-related costs that are reimbursed by community participants might be coded by school districts as *enterprise* activities, which are those “financed and operated in a manner similar to private business enterprises, where the stated intent is that the costs are financed or recovered primarily through user charges.”

In addition to SACS data, we obtained data on student and school characteristics from the California Department of Education from 2005 to 2012. This data included total students enrolled per school by race and ethnicity and the number of students enrolled in free or reduced priced meals programs.

Analysis

Differences in expenditures between districts with SUAs and districts without them could be due to factors other than the adoption of a SUA. For example, districts that adopt SUAs may be larger, have a higher proportion of low socioeconomic status students, or they may just tend to have higher expenditures regardless of their adoption of a SUA. To remove these potential biases from the analysis, we took advantage of the availability of longitudinal data (2005-2012) on district-level expenditures, school characteristics, and SUAs.

We used multilevel mixed-effects linear regression models with district-level expenditures as the dependent variable and an autoregressive residual variance-covariance structure. We assumed annual expenditures are a function of the total number of students in the district, student demographic and socioeconomic characteristics, membership in the group of districts that had a SUA at any point, and the number of schools in the district that had a SUA during the respective year. Each regression included terms for time trends and random intercepts for each school district.

The key variable in these models is the number of schools within a district with a SUA. Its coefficient can be interpreted as the increase in district-level expenditures associated with each additional school that adopts a SUA. We estimated a regression model for each of the seven major function categories: instruction, pupil services, ancillary services, community services, enterprise, administration, and plant services. As explained above, we expected SUA-related expenditures to be captured in *community services* and perhaps under the *enterprise* function. Thus, the main hypothesis in this analysis was that the number of schools with SUAs

within a district would be associated with expenditures in these two categories but not with other expenditure categories. Additional details are provided in the Appendix.

Results

Descriptive Analysis

Of 80 school districts in LAC, 45 responded to the survey and provided the necessary information to conduct the analysis, for a 56% response rate. Nearly half of participant districts indicated that at least one of their schools had adopted a shared-use agreement (**Table 2**). Districts with SUAs had more students on average than districts without them, but the difference was not statistically significant. Similarly, there were no significant differences between the two groups in the racial/ethnic composition of the student body or in the proportion of students eligible for free or reduced-price meals.

Table 2. School District Characteristics by Existence of Shared-Use Agreement, 2012

Characteristic	No SUA	SUA	P-Value
Number of districts	24	21	-
Average number of students	10,020	15,430	0.140
Student demographics			
% White	22	15	0.231
% Black	8	6	0.354
% Hispanic	52	64	0.102
% Asian/Pacific Islander	15	13	0.621
Student socioeconomic status			
% Eligible for free meals	44	55	0.079
% Eligible for reduced-price meals	8	10	0.261

In 2012, per-student district expenditures were not significantly different between school districts with SUAs and those without them (**Table 3**, last row). However, districts with SUAs had higher average expenditures on pupil services ($p=0.01$) and appear to have lower enterprise services expenditures (significant at $\alpha=10\%$) than districts with no SUAs. Over the 2005-2012 period, patterns in per-pupil expenditures were similar for both groups in most expenditure categories (**Figure 1**), except for plant services, where expenditures of districts with SUAs decreased by over 40%, while those of districts without SUAs increased by 4%.

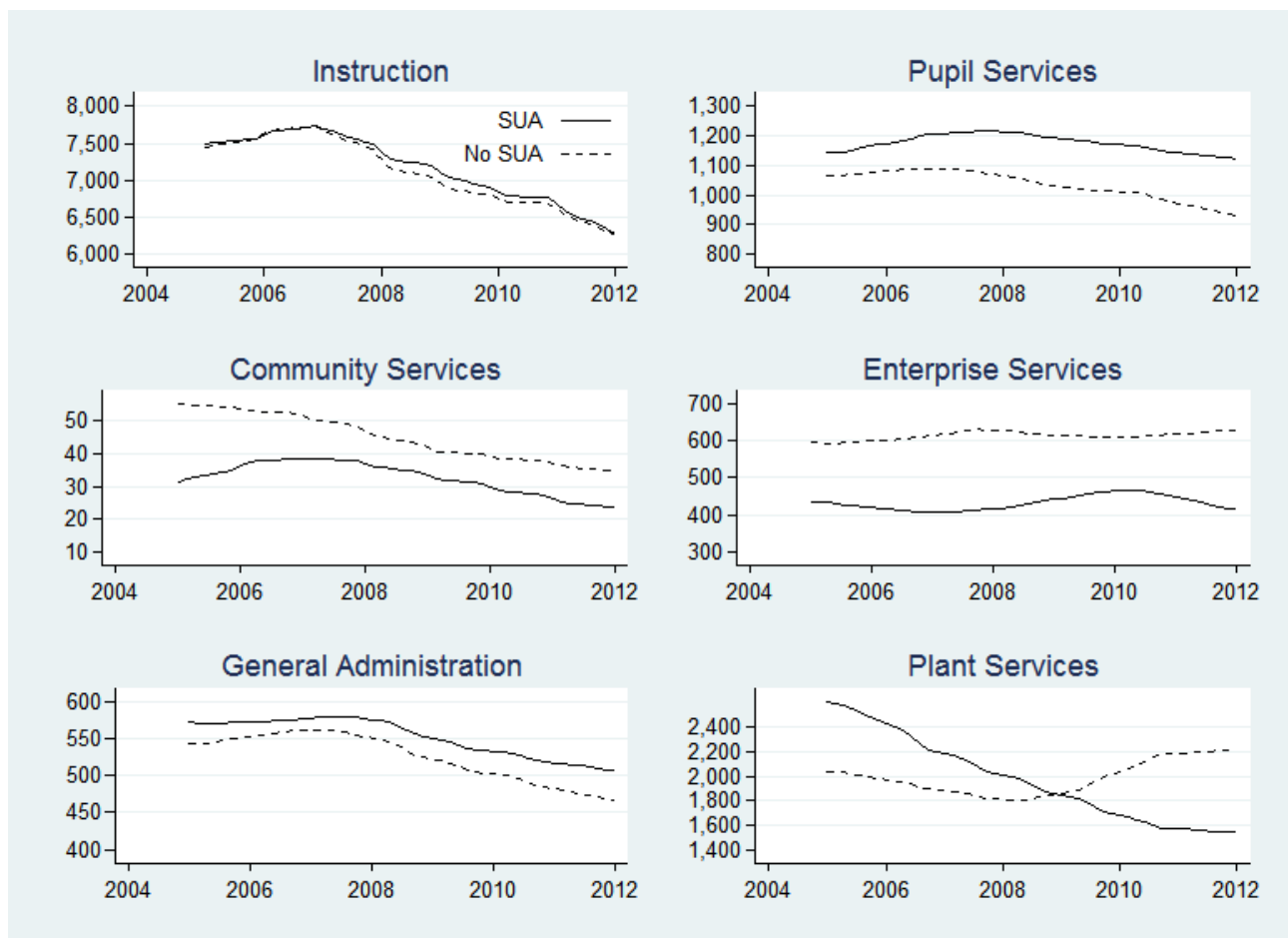
Interestingly, districts *without* SUAs had higher community services and enterprise expenditures than districts *with* SUAs. This suggests that other activities in addition to those related to SUAs are captured in these categories, and highlights the need for analysis beyond descriptive comparisons of expenditures.

Table 3. Per-Pupil District Expenditures by Existence of Shared-Use Agreement, 2012*

Expenditure Category	No SUA	SUA	P-Value
Instruction	\$ 6,165	\$ 6,186	0.927
Pupil Services	872	1,102	0.010
Ancillary Services	28	43	0.196
Community Services	34	23	0.348
Enterprise Services	637	374	0.087
General Administration	447	490	0.291
Plant Services	2,163	1,586	0.117
Total	9,898	9,313	0.298

* In constant dollars, adjusted using the consumer price index for the Los Angeles region.

Figure 1. Per-Pupil School District Expenditures by Category, 2007-2012*



* In constant dollars, adjusted using the consumer price index for the Los Angeles region.

Regression Analysis

The key results in the hierarchical linear regression models are summarized in **Table 4**, which shows statistically significant ($\alpha \leq 0.1$) regression coefficients for the key variable of interest (number of schools with SUA within a district). These results suggest that each additional school that has a SUA is associated with an increase in district-level *community service* expenditures of about \$15,500 ($p < 0.001$). The coefficient in the enterprise services expenditures regression (\$59,000) was only borderline significant ($p = 0.1$), so we cannot conclusively assert that there is a significant relationship between the number of schools with SUAs and these expenditures. As expected, the number of SUAs is not significantly related to any of the remaining expenditure categories, although the coefficient in the General Administration regression was nearly significant ($p = 0.11$). As shown by estimated pseudo- R^2 s, model fit was generally good. More complete details are provided in the Appendix.

Table 4. Selected Results of Hierarchical Linear Models of School District Expenditures

Outcome Expenditure Category	Coefficient for Key Variable: # Schools With SUA	Regression Pseudo- R^2
Instruction	N.S.	0.99
Pupil Services	N.S.	0.89
Ancillary Services	N.S.	0.42
Community Services	\$ 15,464 ***	0.86
Enterprise Services	\$ 58,945 *	0.83
General Administration	N.S.	0.94
Plant Services	N.S.	0.79

* $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.001$

Discussion

Using longitudinal data reported by 45 school districts in Los Angeles County, we assessed whether the adoption of shared-use agreements is associated with higher expenditures. Results from our statistical analysis indicate that each additional school with a SUA is associated to an increase of about \$15,500 in *community services* expenditures and, less conclusively, \$59,000 in *enterprise* expenditures. In 2012, average community services expenditures were \$340,000 and average enterprise expenditures were \$6.4 million among districts without SUAs. Thus, to the extent that our analysis captures causal relationships, we would expect a school's adoption of a SUA to result in a 5% increase in community services expenditures and 1% increase in enterprise services expenditures.

Although our design does not allow for a definitive causal interpretation (more on this below), these findings are consistent with our a-priori expectations. According to SACS guidelines, the *community services* category should capture expenditures from activities concerned with

providing services to community participants other than students. The *enterprise* expenditures category concerns activities with costs financed or recovered primarily through user charges, which could include SUAs where these charges are part of the agreement. In this regard, we should remark that the increases in expenditures estimated in this study are not necessarily fully financed by schools or districts; SUAs often include provisions for the partial or full reimbursement of, for example, maintenance, staffing, or liability expenditures that result from the activities covered by the agreement. SACS data also categorizes revenues; thus it could be possible to identify SUA-related reimbursements, but that analysis was outside the scope of the present work.

This study is not without important limitations. First, we are less than confident that districts consistently use the *community services* expenditure category to capture SUA-related costs. In fact, we are mostly certain this is not the case: in nearly 1/3 of observations for districts that had SUAs, *community services* expenditures were \$0; therefore, these costs, *if any*, must have been entered in other fields, perhaps the traditional categories (e.g., plant services), which would lead to measurement error and potential downward biases in our estimates.

Second, due to the limitations of our data, our analysis assumes that expenditures increase with the number of *schools* that have SUAs, not with the number of SUAs. Thus, our regression cannot differentiate between a school with 1 SUA and another school with, say, 5 SUAs. It is not clear how important this limitation is because there may be economies of scale to SUA adoption since many costs (e.g., maintenance and security) may be fixed or less variable after the first SUA. To the extent that this is a problem, it would cause upward bias in our estimates.

Third, although our data covers 8 years, most school districts in the sample either had SUAs or did not have them throughout the entire span. For example, 18 out of the 21 SUA districts always had at least one SUA and only 6 districts experienced changes in the number of schools with SUAs during this period. Although it is not clear how much this impacts our estimates, our analysis would certainly be more robust had there been higher variation in SUA adoption in our sample.

Fourth, although we requested the start and end dates of current and previous SUAs, we were mostly unsuccessful in collecting this data for SUAs that are no longer in place and thus those agreements were not included in the analysis. Therefore, there may be districts in our data that had SUAs but are identified as not having any, and there could also be districts with an underreported number of schools with SUAs. Both of these situations would lead to downward bias in our estimates.

Finally, as any observational study, our analysis is vulnerable to unobserved confounders, and thus we cannot conclusively give a causal interpretation to the association we found between SUAs and district expenditures. For example, districts with SUAs might be more likely to also

participate in other activities with costs captured in the community services category; since we do not have any information on the activities performed by districts in our sample, we cannot eliminate this potential confounding effect. Moreover, there could be reverse causation if becoming involved in community activities, and thus having higher community services expenditures, makes districts more amenable to adopt SUAs. In both of these cases, our estimates of SUA-related expenditures would be upwardly biased.

Bibliography

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